



Week 4 – Carbohydrates ... Love ‘em or Leave ‘em?

Carbohydrates in the news and on the shelves

While the researchers, media, authors, health marketers and talk show hosts continue the debate about the ideal mix of carbohydrates, protein and fats in a healthy diet, most people are left just wanting some simple eating guidelines to meet personal goals. Sometimes food choices are anything BUT simple. Take the “energy bar”. Not too many years ago, there were a few granola bars, sports bars and diet bars. Now there is a dizzying array of bars and goos for every conceivable weight loss diet, gender, sport activity and disease.

Just the facts, please

1. Carbohydrates yield 4 calories per gram, regardless of the source. Proteins also yield 4 calories per gram, while fats yield 9 calories per gram.
2. An excess of *any* of these 3 energy nutrients from food will be stored as body fat.
3. Carbohydrates from fruits, milk, grains and vegetables become glucose. Glucose’s primary role is as an energy source. This is in contrast to protein, which has more important roles than the provision of energy. Fat is also an important fuel, but even fat has numerous functions in addition to providing energy.
4. Glucose is both the body’s primary fuel for most cells, and also the *preferred* fuel for the brain, red blood cells, nervous system, fetus and placenta.
5. Compared with stores of fat and protein, glucose stores are very limited. The body can store only limited amounts of glycogen—the storage form of glucose in liver and muscles—usually enough for a few hours or a day.
6. Carbohydrate-containing foods supply important nutrients not readily available in other foods--fiber, certain vitamins and minerals, antioxidant nutrients and phytochemicals.

Consequences of carbohydrate imbalances

Too much carbohydrate can lead to excess body fat, just as too much protein or fat (see #1-2, above). For people with certain medical conditions (diabetes, insulin resistance, elevated triglycerides), too much carbohydrate may aggravate their condition and put them at increased risk. A high sugar intake can contribute to dental caries, or cavities.

Too little carbohydrate can lead to fatigue, particularly for physically active individuals. Inadequate carbohydrate can lead to loss of valuable body protein stores in muscle and other tissues. Suboptimal intake of key nutrients (fiber, folate, and potassium, to name a few) can result when carbohydrates are severely limited. A recent study from the University of Texas Southwestern Medical Center concluded that low carbohydrate/high protein diets put people at increased risk for kidney stones.

So how much carbohydrate?

It depends on individual goals, but a recent report from the Institute of Medicine of the National Academies emphasized the importance of a balance of nutrients, with carbohydrates making up

45 - 65 percent of daily calories, and fats 20 - 35 percent (low saturated fat). Most active people need the higher end of carbohydrate recommendations.

The Healthy Harvest diet plans at 3 different calorie levels (P. 2 in the Participant Booklet) all provide carbohydrates at the lower end of the carbohydrate range, even when 2 servings of dairy products are included. To increase carbs, just add extra servings from whole grains, vegetables, fruits or lowfat dairy products. Also see *Setting Goals, Tracking Progress and Using Pyramids* on the Healthy Harvest web site.

Other recommendations for carbohydrate intake are based on activity. These guidelines are from the International Center of Sports Nutrition. For more details, ask for a copy of *Your Nutrition Game Plan*, available at the Wellness Center.

Activity Level	Carbohydrate (grams) per pound Body Weight*
Moderately Active	2.3 g/lb
Very Active (aerobic activity)	3.6-4.5 g/lb

Web sites for more information

- *Cancer Experts Warn Against Eliminating Either Fat or Carbs to Lose Weight*, <http://www.aicr.org/>
- *Fad Diets Versus Dietary Guidelines*, <http://www.eatingbythebook.com/fads/fads.html>
- *High-Carbohydrate Diets Net Lower Calorie Levels*, USDA Agricultural Research Service, <http://www.nps.ars.usda.gov/menu.htm?newsid=1889>
- *The Protein Myth*, Physician's Committee for Responsible Medicine, http://www.pcrm.org/health/Info_on_Veg_Diets/protein.html
- *Set the Record Straight: The Truth on Fad Diets; and Facts on High-protein vs High-Carb Diets*, Wheat Foods Council, <http://www.wheatfoods.org/>
- *Weight-loss and Nutrition Myths – How Much Do You Really Know?*, National Institutes of Health Weight-control Information Network, <http://www.niddk.nih.gov/health/nutrit/pubs/myths/>